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Hanging at Picnic Rock

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Hanging at Picnic Rock

By Liana Joy Christensen

I was nine and he was seven, the first time my younger brother and I ever spent the night away from our parents and family home. My aunt and uncle had called by and offered to take me away with them for a short holiday. They were visiting friends who worked in Bodallin, a one-house railway town on the line to Kalgoorlie. My brother wanted to come so much that he cried. The adults relented and took us both. It proved a rich experience for a pair of city kids who pretty much lived in the local bush, but had never actually 'been bush' before. It's a funny distinction, seeing as there was precious little vegetation above the scrub line around Bodallin. But, of course, 'the bush' refers less to actual bushland and more to a cultural collection of lifestyles lived beyond the limits of suburbia. We only spent a weekend in Bodallin, yet it left an indelible series of first impressions, carved deeper with each pleasurable recollection in the years afterwards.

One of the strongest of these memories is the salt lake. We saw it from the top of a huge rock that rose abruptly from the plain below. It spread out beneath us like a featureless map, and we watched the progression of a string of emus across the barren, dirty whiteness. Visiting the local rock is a quintessentially Australian pastime. However modest its upthrust, however commonplace the material of its composition, there is something compelling about high points in flat landscapes, and granite outcrops are the commonest type in Western Australia. The highest of them - Peak Charles, 100 km north-west of Esperance - achieves a heroic, near-mountainous, 500 m above the low plain - but most are less than 100 m higher than the surrounding country. Size is not the main attraction, however. It is the visual claim of their difference, the multiplicity of their forms, the muted colours of their flanks that draw the eye. Most are lichen-painted in a palette of grey in the south-west, becoming brown then dark red in the arid zone. The one near Bodallin was a beauty: I can clearly picture its dark, looming bulk from the base, and the 360º view from the top.

From memory, I would guess it to have had the classic dome shape of a monadnock, known elsewhere in the world as inselbergs (literally 'island mountains'), bornhardts, kopjes. It wasn't a tor - a group of corestone exhumed by erosion. Neither did it answer to the other common forms of granite outcrop: flat, disc-like pavements, exposures in mountain ranges, coastal declivities and knobs, scattered boulders and haystacks. Some granite rocks leave no outline on the sky: they are called fugitive because - although they subcrop from the basement rock beneath them - they remain buried beneath the surface layer of soil. Those granite forms we can see on the surface may be the result of weathering by physical or chemical means. Quite often the geomorphological evolution of granite landforms is convergent: that is, different causes lead to similar looking outcrops, so the origins of any particular form are not always obvious, even to the experts.

But the fascination with granite outcrops is not just a scientific or a local phenomenon. Across Australia, these outcrops have accrued cultural capital given literary expression in our best-loved mystery, *Picnic at Hanging Rock*.[2] With unerring instinct, Joan Lindsay invoked - by silence and absence - the inexpressible,

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the irreducible heartland of invisible Australia. The central metaphorical conceit of her book is the land, the ancient rock taking unto itself the very flower of white colonial youth. They disappear into a place from which there was no return. The land itself acts as the agent of transformation. I wonder how the indigenous people of Australia's most well known monadnock, Uluru (Anglo name: Ayers Rock), view such transformative potential. As tour bus after tour bus pours into the dead centre, a group of the traditional owners sits at the rock's base with a polite sign welcoming people as guests to their country and asking the visitors to respectfully refrain from climbing on the rock because it is sacred to them. Not one in a hundred, Australian or overseas tourist, heeds their request. It would not happen at Mecca; it would not happen at Notre Dame. The people of Uluru could be forgiven for wishing that Lindsay's tale was literal not literary, that the endless stream of people might simply disappear somewhere on the rock.

It's not for me to know specifically how rock outcroppings were integrated into the indigenous maps of Western Australia. But it's hard to imagine such dramatically obvious landmarks didn't feature strongly in indigenous cultures here, certainly as points of reference and likely as boundary markers. One practical aspect of indigenous use of rock outcrops is, however, well documented. Gnamma (sometimes namma) is a word from the Western Desert languages used by indigenous people from Western Australia, and to a lesser extent in the Northern Territory and South Australia. Gnammas are natural water pools found in granite outcrops. Sometimes called weather pits or - tautologically - gnamma holes, these rock pools are a valuable water source in the arid landscape: one lesson that non-indigenous people quickly absorbed.

It may be obscure to tap-turners in the city, but water is *the* defining fact of life in arid environments. Indigenous people weren't alone in recognising the relationship between granite outcrops and water. Quite a few plant species are also associated with the moist micro habitats provided by granite outcrops. Some species with high water needs are resident in gnammas: quillworts, mudmats and millfoils. *Myriophyllum lapidicola,* the rarest of them, is known from only two gnammas. Other species live at the base, in apron soils that capture the water that runs off the rock. Largest among them are species of eucalypts, wattles, she-oaks and rock figs. The usefulness of granite outcrops for water harvesting was also remarked by LeFroy in 1863 on an expedition to the Goldfields. Today, two hundred water supplies in the Western Australian wheatbelt rely on runoff from rock catchments. Grouted rock or masonry walls are constructed on a slight gradient across the rock face and used to divert run-off into concrete tanks or excavated earth tanks built at the base of the rock. It sounds harmless enough in theory, but it can have disturbing ecological implications. Construction on the rock face and around its base has the potential to disrupt fragile plant communities on the rock face itself, and in the long term water diversion may well spell the death of the plant communities sheltered in the apron of the outcrop.

The various components of the total ecology of granite outcrops together form unique and rare communities. Being massive, granite doesn't wear down evenly, but will decompose along lines dictated by its mineral composition. Quartz is resistant to weathering; feldspar is not. Naturally occurring fractures, the legacy of the original tectonics, give differential *entré* to the agents of change. Geomorphology, earth-shaping, begins with weathering, followed by the erosion of weathered material. Feldspar, the dominant mineral, breaks down to clay. Soil pockets form. Once the broad strokes are executed by wind and water, then the surface detail is finished by lichen and cyanobacteria, commonly called blue-green algae. This alga (frequently of a species called *Trebousia* which can also secrete acid) actually produces nitrogen. And when it rains, the algae and lichen fix the nitrogen, a process that helps break down the rock surface and makes it more habitable. In this manner, each rock's surface is sculpted

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into a unique configuration of exfoliated slabs, hollowed or pedestalled rocks, fissures, crevices, shelves and drainage lines. And in each dimple or dent on the rock face water collects, either transitory or permanent, forming a series of micro habitats: ponds, pools, waterfall tiers, Babylonian gardens. And each micro habitat offers a niche for different creatures.

Some species from a wetter age (as we have seen with some of the spider species of the paleodraingage channels) have managed to endure beyond their remaining range only by virtue of the kind of micro water supplies available on, or micro habitats associated with, granite outcrops. Such outcrops are a botanical wonderland, according to Steve Hopper of the Kings Park and Botanic Gardens, who offers an explanation of the variety of strategies these plants use to survive.[3] Many outcrop herbs retire their nutrients to underground tubers and re-emerge when conditions are more favourable. Others, dry-adapted pioneers, have inched across the rock face, lying low and living under seemingly impossible conditions. Because the bare rock acts as a barrier to fire, a high proportion of rock outcrop perennials are obligate seeders - plants that are killed by fire and recruit only from seed. For the most part, however, hot rocks are hard to live on, and the diversity of plant species on outcrops in arid zones is low compared with the outcrops in areas blessed by a more moderate climate. Such is the case in the south-west corner of the State, home of up to 8 000 species of vascular plants, 75% of which are endemic. Each year not just new species but whole new genera continue to be described by botanists. Granite outcrops host at least 1 320 of these plant taxa, and maybe as many as 2 000 in distinctive, often unique, groupings.

Atypical of Australian flora, annuals feature strongly among granite outcrop species - one strategy for drought avoidance. Few would win prizes for their blooms, but everlastings and annual species of triggerplants put on a massed show equal to any in the plant world. Hopper suggests that the typical plant of the granite outcrop, though, is a woody or herbaceous perennial - with the Myrtaceae, Orchidaceae and Mimosaceae families dominating. Some of the granite outcrop perennials have become pretty specialised. The adaptation of the genera *Borya* and *Cheilanthes*, for instance, have earned them the common name of resurrection plants. When summer temperatures climb into the 30s and 40s week after long week, the temperature on the bare rock face can reach as high as 80°C. During this time resurrection plants cling like dead, orangey skin to the rock, the vegetative equivalent of playing possum. According to Hopper, they can survive with less than 5% of normal leaf moisture content. [4] Come the inundating rains, they continue to cling to the rock, greenly triumphing into a vivid carpet within 24 hours. Blake's *Auguries of Innocence* taught us

> To see a World in a Grain of Sand,
> and a Heaven in a Wild Flower,
> Hold infinity in the palm of your hand
> and Eternity in an hour.[5]

The resurrection plants are organic auguries for a less enduring and more material world. Though they can persist on the rock despite relentless extremes of dry and wet, they are all too easily dislodged by the boots of careless or destructive picnickers. This simultaneous possession of extraordinary resistance and extraordinary frailty is a repeated trope throughout the organic world. Humans have always been astounded at this central fact of our own corporeal reality. The human body that is capable of enduring

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harshness across a range of climatic extremes, and surviving despite repeated assaults on its integrity, can suddenly succumb to the most mundane of minor accidents, the most microscopic of viruses. I have heard Bert Main use the grain of sand to tell a story more ominous than Blake's. He told me "Imagine a cone of sand on a plate. If you poured a steady stream of sand from the top, the cone would for a while maintain its cohesion by shedding sand from its flanks. But sooner or later one grain of sand *will bring the whole system down.* That stream of sand represents the changes we are inflicting on our ecosystems. Its ability to maintain cohesion in the face of this stream of assaults belies the suddenness and swiftness with which the whole system will unravel in response to just one more minor change." The mathematical expression of this concept is "catastrophe theory" - it may take a long time for a system to deteriorate, but the end can come with breathtaking speed. We cannot always know in advance what the fatal factor might be, but if we were less complacent about our ecosystems' seeming tolerance for abuse we might do much to slow the stream of sand, to reduce or reverse the volume of changes we inflict.

Still many plant species cling to life on the rocks – literally. The outcrops are refugia for them. Twenty-nine of the 238 plants listed as Rare Flora under the Wildlife Conservation Act are granite outcrop plants. Beyond specific species, however, granite outcrop ecosystems as a whole could be characterised as rare and potentially endangered. Each assemblage is particular: in some parts of the south-west forest, quite different plant species occupy granite outcrops that are separated by less than 100 m. Glimpsed afloat in a sea of winter mist, they are manifestly islands. Island biogeography is perhaps the best way to conceptualise the stresses and advantages of granite outcrop ecosystems. Just as with off-shore islands, exactly the same qualities that create their vulnerability, may just provide the means of their survival. Unmanaged, most - if not all - of the rock outcrops of the Western Australian wheatbelt will continue to succumb to invading weeds and stock. Their vegetation will fall further into decline, and no longer provide adequate refugial habitat for native animals that are already harried to near extinction by feral predators. But, precisely because they are small and isolated, it is possible - given sufficient resources of energy and money - not only to protect them from further damage, but also to reverse at least some of the damage that has already occurred.

First, the outcrops have to be restored to their 'island' status. Fencing those outcrops that are small enough to make it possible is an option. Although fencing where feasible slows further deterioration, it does not, by itself, achieve restoration. Much of the everyday work on small outcrops is happening on private land and relies on the good will of individual farmers or local *Landcare* groups. Some people are investing considerable time and effort into weeding, replanting and otherwise managing such remnant vegetation. Perhaps the land itself slowly acts as an agent of transformation if the people can hold still and care for long enough. In such action the visible result is the partial restoration of land. The less visible - but more important - result is the restoration of the ethic of stewardship. In the long term, the survival of vast numbers of diverse species, including our own, hinges on our capacity to act as stewards rather than despoilers. The willingness of humans to shift their culture towards reintegration is vital. Of course, it is always harder to achieve such a value shift regarding areas that are open to the stewardship, neglect or wilful damage of all and sundry.

All too many granite outcrops are vulnerable in these ways. I talked earlier of gnammas, but failed to mention the other common indigenous use of granite outcrops as a canvas for art, both painting and engraving. That childhood day at Bodallin was a *Wadjellah* (European) 'initiation' into the less dramatic, but related ritual of 'hanging at picnic rock' - a rite marked by the smoke of a million barbecues, a rite that is repeated every weekend at every local rock. Maybe we never got past our ancestors' obsession

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with hill forts. Maybe we never even got past the playground chant of anyone who captured the higher ground: *I'm the king of the castle and you're the dirty rascal*. In less remote areas some indigenous art is erased or scarred with graffiti - the witless palimpsest of the later arrivals. Preventing such unwanted overlays is another one of the complex conflicts of managing highly desirable sites such as granite outcrops. From indigenous high art to ignominy, from Babylonian garden to lifeless rock, from gnamma well to rubbish pit, from Rock-wallaby to sheep: how do you stop the places being 'loved' to death?

That was the text of our conversation the day I went walking on Yorkrakine Rock with Prof. Bert Main. We had left Barbara Main bent over her spider plots at North Bungulla and went to see what we could find. If you know how to look, life can be found amidst apparent barrenness. Picking our way up the rock face, we did our best to avoid the dormant plants that are so easily destroyed. We looked under rocks in pools - for frogs and other animals - and replaced the rocks exactly as they were. We saw a *Ctenophorus ornatus* skitter across the rock from crevice to crevice. A stilting species, *ornatus* minimises contact with the hot rock just like any Australian *sans* thongs: up on tip-toe and run as fast as possible from shady patch to shady patch. *C. ornatus* - and a handful of other lizards - are the only vertebrate species that live exclusively on granite outcrops, although the Rock-wallabies are never far from them. The feats of biochemical wizardry *C. ornatus* has achieved in order to adapt to its harsh environment defy belief. During extended droughts, for instance, it is able to maintain its total body water in body fluid outside cells, by concentrating sodium in plasma to almost twice the level that would be fatal in mammals. Conveniently, the sodium is supplied in the lizards' major food supply - sodium-rich *Iridomyrmex* ants. "I can't say I envy them," Bert concluded dryly, "it must be like having the mother and father of a hangover". Sadly, when people have not been taught how to look, apparent barrenness can turn into true barrenness. In summer, especially, the granite outcrop can seem as lifeless as the moon. The little upturned piles of sheet rocks we saw on Yorkrakine Rock, the scattered rocks tossed for fun were the signs of ignorance not malice. If they had learnt the needs of the stilting lizard, most people would leave it the relief of a sheltering rock overhang. If they knew the miracle of resurrection plants, most people would take care where they walked.

We descend again, still searching for frogs. For more than forty years Bert has been monitoring frogs. One of the things he looks for is the markings on their back - some are marked with a lyre-shaped dorsal fold, others are not. He likes to tell you he picked frogs as a subject because they were easy to study - small, unaggressive, readily available. As a kid he'd learnt to distinguish different frogs by their calls. Quite distinctive calls, some of them. Their common names speak volumes: it's no surprise that the Motorbike frog *Litoria moorei* sounds remarkably like a two stroke motor ratcheting up through the gears. Of course, those who identified them by sight rather than sound dubbed them with the far more lyrical title of Green and Golden Bell Frog. The onomatopoeic Pobblebonk *Limnodynastes dorsalis* needs no further explanations. As mating calls go, the monotonous bonk! bonk! bonk! gets straight to the point, but lacks musical charm. This makes its alternative common name, Banjo frog, somewhat insulting to Banjo players.

In the small print of the Acknowledgments section at the end of Bert's Royal Society Medal lecture is a wry and sad observation: "It has been wonderful for me to pursue my hobby. I am sure I could not do so in the present economic and funding climate."[10] Indeed it's true that natural scientists of today who wish to spend significant amounts of time in the field are often hamstrung by lack of funding for such economically irrational behaviour. But there are other factors at play, such as the strange interactions between our present cultural climate and our warming literal climate both of which work to flatten and

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simplify our ecosystems. The result of these interactions evoke in us complex responses. Guilt at the damage we have wrought. Anger at our seeming impotence to prevent further damage. Long smouldering anger, too, apparently at the vicissitudes and fragility of organic existence. An anger that drives us into new technologies in 'a rush to leave the meat behind'. Perhaps even boredom with a system that is rapidly becoming nothing but globalised wallpaper - wallpaper decorated with a stylised motif of habitats, in much the same way that housing developments are often named after the plant species their presence has eradicated. All these responses might make it easier to succumb to the allure of 'complex and diverse ecologies' of virtual reality. Fascinating as such a cultural epiphenomenon might be, we ignore its material underpinning at our peril. The naive resistance to this dominance is the cyclical romanticism of 'back to nature' movements. But neither Bert, nor I, would care to position ourselves so simplistically. Close observation, over time, in the field is not necessarily a repudiation of cultural reality, but a complex resistance and refusal to disenfranchise its underlying, organic, bodily reality.

So here we were in the field on this hot September day looking for frogs at Yorkrakine Rock. It was late in the year, a lot of the rock's moisture was shrinking and disappearing - not the most propitious time for frog finding. Still, there remained a shining stream line which should by rights have yielded dozens of frogs to knowing hands. He found two. Nothing was said at the time. We returned to the car and sat quietly for a few minutes. But before switching the ignition he turned to me and spoke - characteristically abrupt; uncharacteristically bitter: "You came in search of nature. Well, you're too late." It was a moment of peculiar horror. I could only sit in silence and endure.

Bert is no sentimental environmentalist, neither is he a fool. He knew and I knew that 'nature' is at one level nothing more than one of the grandiose collective notions of human culture. We also knew, as perhaps theorists - both cultural and scientific - sometimes seem to forget, that there is a material reality to be found in the field that exists independently of cultural conceptions. Neither death nor extinction is merely a construct.[11] It's true that material reality, call it nature, or don't call it anything, will persist in one form or another long past the demise of our species. But a *cri de coeur* need not be modulated by philosophical pedantry. He knew - and I knew - grief. I was not too late for nature, whatever that might mean. I was too late to witness the ecological richness he had seen disappear over his lifetime. It was the loss of species, the loss of diversity that would break your heart. I was too late for the past.

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[2] Lindsay, J. *Picnic at Hanging Rock,* Cheshire, Melbourne, 1967.
[3] Hopper, S., Brown, A.P., Marchant, N.G. "Plants of Western Australian Granite Outcrops" IN *Journal of the Royal Society of Western Australia,* 80, pp.141-158, 1997.
[4]Ibid, p.144.
[5] Blake, W. "Auguries of Innocence" IN *The Mentor Book of Major British Poets*, edited by Oscar Williams, Mentor, a division of Penguin, New York, 1963, pp.40-43.
[10] Ibid, p.96.
[11] Adapted from an article in *Harper's Bazaar*, April 1996, entitled "Our Next Race Question". The following quote was on p. 58 -

KLOR DE ALVA: But everything, even whiteness, must be constructed and is therefore subject to change.

WEST: Categories are constructed. Scars and bruises are felt with human bodies, some of which end up in coffins. Death is not [just] a construct.

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